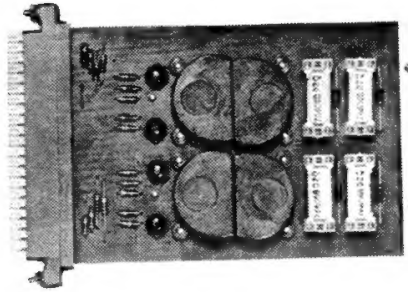


FAIRCHILD

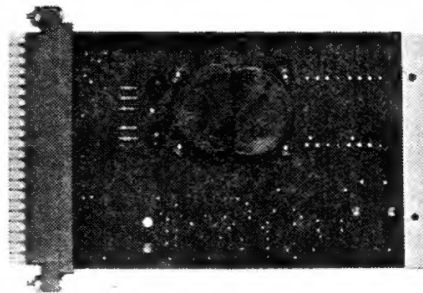
DOUBLE ATTENUATOR CARD w/FOUR SWITCHES

MODEL 692C



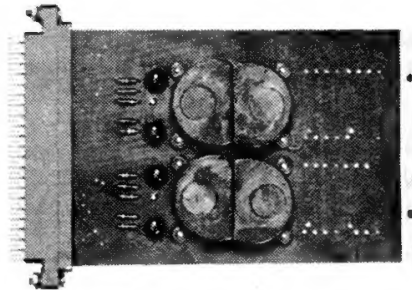
ATTENUATOR CARD (requires actuator)

MODEL 692D-1



DOUBLE ATTENUATOR CARD (requires actuator)

MODEL 692D-2



INSTRUCTION MANUAL

IB692C/968

FAIRCHILD MODEL 692C INTEGRA II CARD

Applicable also to 692D1, 692D2 cards

GENERAL

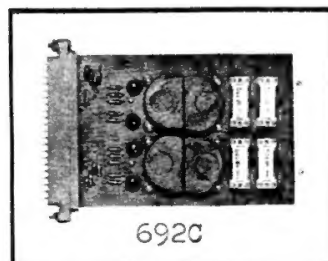
FAIRCHILD Integra II card model 692C represents the packaging of two remote controllable attenuators, with relays and mixing networks, for delegation and mixing of signals into two audio channels. Each attenuator represents a constant impedance unbalanced modified H pad capable of attenuating signals into infinity noise-free, smoothly, and from remotely located fader-actuators. Attenuation is accomplished through the use of light dependent resistors in the attenuator circuit which are illuminated by incandescent bulbs. These bulbs in turn are driven through transistors, which are controlled by the remotely positioned potentiometer. Light sources are designed to provide average uninterrupted service for several years by keeping the driving voltages below the design voltage of the bulb.

Relays used on the card are of magnetic reed type - one of the most reliable methods of electro-mechanically switching electrical circuits today. Hermetically sealed contacts are brought together by the external magnetic field produced by the coil surrounding the reed capsule. Each relay coil has diode suppressor across it for transient-free switching. Each relay on the board can be easily unplugged for replacement or servicing. Life expectancy of the relay is measured in tens of millions of switching operations.

Mixing networks located on the board provide a convenient means of locating mixing resistors close to the switches for minimum noise and interference pickup.

Each of the attenuators and switching functions appear on separate terminals, allowing the designer of the system to utilize any of the functions separately in different parts of the circuitry.

The 692C card is extremely useful in construction of remote controllable systems where gain riding has to be done remotely and the signal may be switched off or delegated to various circuits.



The 692C can be used for changing the gain simultaneously of two channels, using an attenuator per channel, with one remote actuator driving both circuits at once.

ELECTRICAL SPECIFICATIONS

ATTENUATORS

Insertion loss	3db at 600 ohms, 7db at 150 ohms
Impedance	600 ohms or 150 ohms (on request) constant within $\pm 15\%$
Attenuation	0-infinity (-125db minimum)
Level handling	Input level 24 dbm maximum
Power Requirements	6.3V DC at 60 ma/attenuator section 120 ma total
Reaction time	.15 sec. maximum

RELAYS

Contacts	1 type A per relay (single pole single throw- normally open) 2 relays
Level handling	Up to 10 ma, voltage not exceeding 50V DC for long life.
Power Requirements	24V DC at 6 ma per relay coil
Reaction time	Less than 1 mSec (.001 Sec)
Inter-contact capacitance	Less than 1 Pf.
Card size	3-9/16 wide x 5-5/8" long (max including contacts)

MIXING NETWORKS

Type	Bridging (impedance varied on request)
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<u>TERMINALS</u>	<u>692 C</u>	<u>692 D2</u>	<u>692 D1</u>
1 +24 VDC	x		
2 Relay 1 -24 VDC	x		
3 Relay 2 -24 VDC	x		
4 Mix net 2	x		
5 Mix net 1	x		
6 Inputs relay 1 & 2	x		
7 GND <i>Low</i> side for input & output attenuator 1	x	x	x
8 Output high attenuator 1	x	x	x
9 -6.3 VDC	x	x	x
10 Actuator wiper attenuator 1	x	x	x
11 +6.3 VDC	x	x	x
12 Input high attenuator 1	x	x	x
13 GND input & output low attenuator 2	x	x	
14 Input high attenuator 2	x	x	
15 Actuator wiper attenuator 2	x	x	
16 Output high attenuator 2	x	x	
17 Input relays <i>3 & 4</i>	x		
18 Mix net 3	x		
19 Mix net 4	x		

x denotes connection

<u>TERMINALS</u> (cont'd)	<u>692C</u>	<u>692 D2</u>	<u>692 D1</u>
20 Relay 4 -24 VDC	x		
21 Relay 3 -24 VDC	x		
22 No connections			

CAUTION: When soldering attenuator ground wires (terminals 7 and 13) make sure that input and output low sides (commons) are physically joined at the P.C. connector terminals. If they are connected to the common ground some distance away from the terminal, infinity attenuation will never be achieved.

MOUNTING

The 692C card may be used either in the FAIRCHILD 692 RM 5½ inch rack mount accepting 16 cards in a row, or a 692 SCH single card holder mounted in the 662 RM rack frame, taking 1½ inches of space horizontally and 5½ inches vertically, or in any other feasible manner.

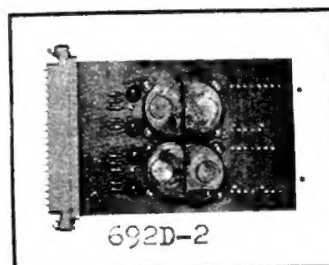
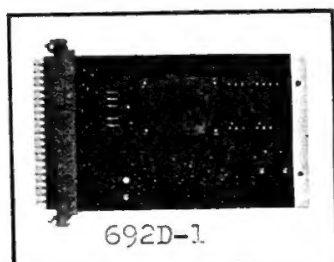
Power supply recommended to drive the 692C card is the FAIRCHILD 624 providing adequate power at 24 VDC (2 amps) and 6.3 VDC (3 amps) to drive as many as 30 attenuators (15 692C cards) and all relays, along with power to spare to supply all amplifiers and associated equipment for average size installation. If one of the supply voltages is already available, separate power supplies can be purchased for 6.3 VDC - Model 667-DII, and for 24 VDC Model 667-III. There are smaller power supplies available also where power requirements are for one or two cards only.

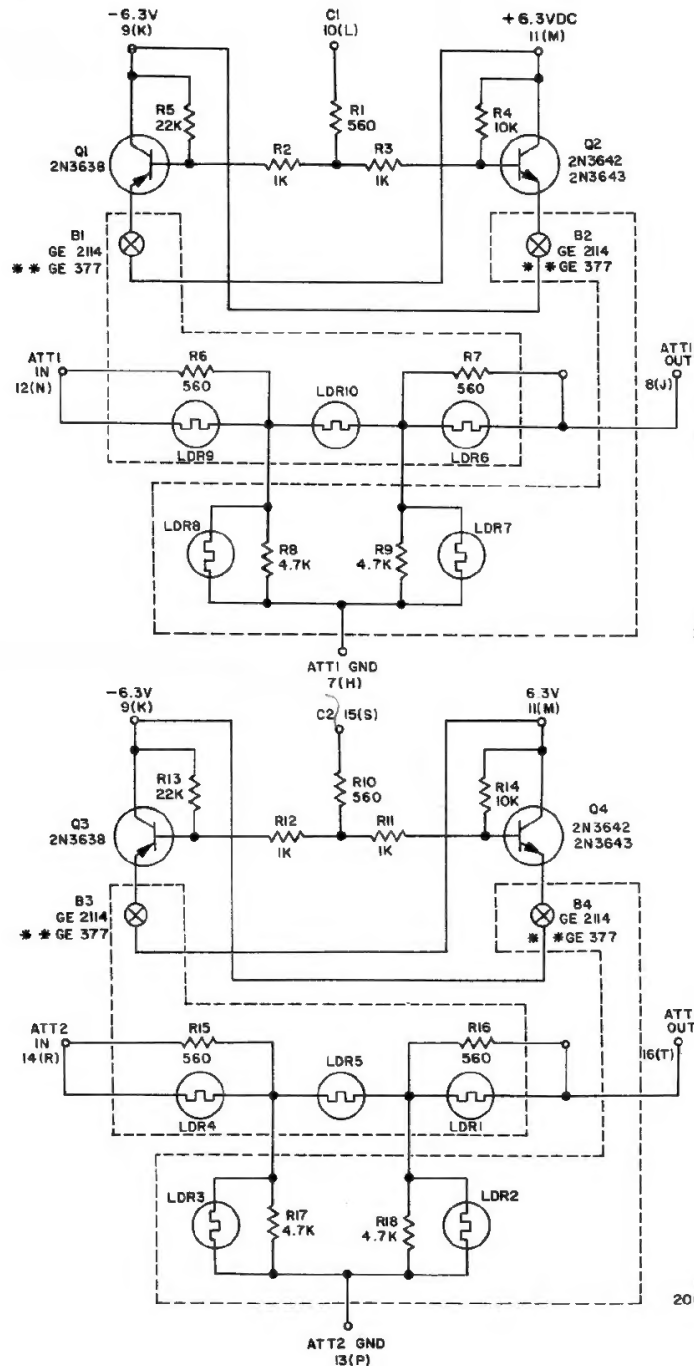
MODEL 692D/1 ATTENUATOR CARD

The 692D/1 card contains only one remote controllable attenuator for 600 or 150 ohms without relays or mixing networks. Circuit is identical to the attenuators in the 692B card. Specifications of the attenuator are the same.

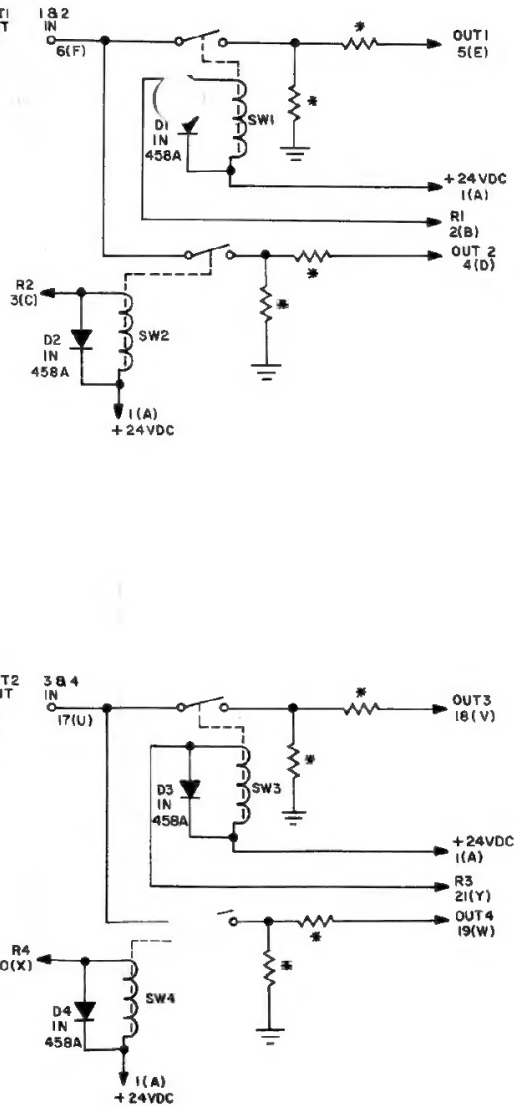
MODEL 692D/2 ATTENUATOR CARD

The 692D/2 card contains two remote controllable attenuators for 600 or 150 ohms without relays or mixing networks. Circuit is identical to the attenuator in the 692B card. Specifications of the attenuator are the same.





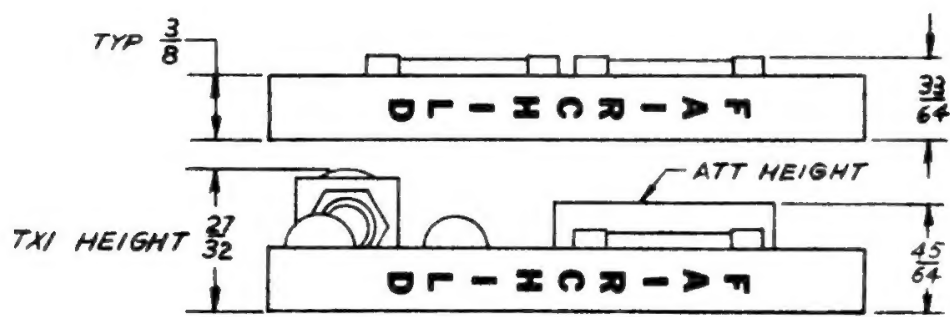
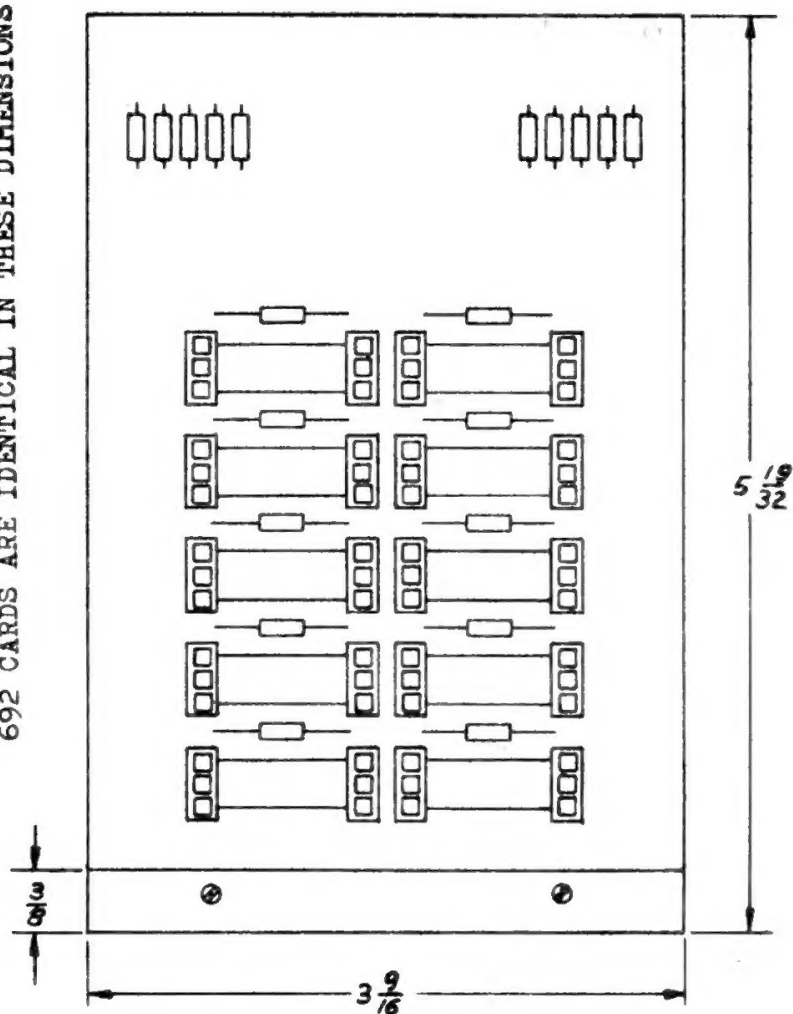
- NOTES:
1. VALUES FOR 600 Ω ATTENUATORS
 2. * - THESE RESISTORS SELECTED FOR DESIRED MIXING NET
 3. ALL DIODES IN 458A
 4. LDR CELLS, FAIRCHILD * 66968
 5. * - PLUG IN BULBS



692C DOUBLE ATTENUATOR SCHEMATIC

INTEGRA II PC BOARD MOUNTING DIMENSIONS

AUDIO SWITCHER CARD USED AS AN
EXAMPLE FOR LENGTH & WIDTH. ALL
692 CARDS ARE IDENTICAL IN THESE DIMENSIONS.



SWITCH CARD

AMP
ATTENUATOR
CARD